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PUBLIC HEALTH REPORTS

VOL. 35 DECEMBER 10, 1920 No. 50

COMMISSION ON MILK STANDARDS.

REPORT OF THE NATIONAL COMMISSION ON MILK STANDARDS OF THE NEW YORK MILK COMMITTEE, 1920.[1]

The National Commission on Milk Standards of the New York Milk Committee met in their annual convention in New York City at the New York Academy of Medicine on May 20 and 21, 1920. The members present were as follows:

John F. Anderson, M. D.
W. A. Evans, M. D.
Charles J. Hastings, M. D.
J. N. Hurty, M. D.
E. C. Levy, M. D.
Prof. E. V. McCollum.
Charles E. North, M. D.
J. S. Neff, M. D.
William H. Park, M. D.
M. P. Ravenel, M. D.
Milton J. Rosenau, M. D.
Prof. H. C. Sherman.
Prof. L. L. Van Slyke.
Chester H. Wells.
Wm. C. Woodward, M. D
Dr. Redfield, representing Dr. Alsberg.

The program included the consideration of pasteurization, clarification, dried milk, vitamines, butter substitutes, ice cream, campaign for establishment of milk standards, bacterial testing of milk, education of public to increase the use of milk, school lunches and milk, a service bureau, milking machines, comparative cost of milk with other foods, dairy inspection, standardized and adjusted milk, reconstructed milk, etc. Many of these subjects were presented in the form of progress reports, their study and consideration to be continued for another year. The subjects on which resolutions were unanimously passed and released for publication are as follows.

(1) Pasteurization.

Experience with the pasteurization of milk by the use of the time and temperature recommended by this commission has justified in every way the selection of the time and temperature which were recommended, and the commission wishes, therefore, to confirm the original report on this subject by stating that so far as the commission is aware, there is no reason why it should change the recommendation originally made regarding the proper time and temperature of pasteurization of milk. The recommendation originally made and published in the Public Health Reports, February 16, 1917, was as follows:

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[1] Previous reports were published in the Public Health Reports, May 10, 1912, pp. 673-700, Reprint No. 78; Aug. 22, 1913, pp. 1733-1756, Reprint No. 141; and Feb. 16, 1917, pp. 271-296, Reprint No. 386. Resolutions passed at the meeting held in Chicago, Ill., Dec. 18, 1918, were published in the Public Health Reports Jan. 17, 1919, pp. 69-71.

(a) That pasteurization of milk should be between the limits of 140° F. and 155° F. At 140° F. the minimum exposure should be 20 minutes. For every degree above 140° F. the time may be reduced by 1 minute. In no case should the exposure be for less than 5 minutes.

(b) In order to allow a margin of safety under commercial conditions, the commission recommends that the minimum temperature during the period of holding should be made 145° F., and the holding time 30 minutes.

(2) Scurvy.

In 1917 the commission adopted a resolution to the effect that in its opinion the pasteurization of milk at 145° F. for 30 minutes destroys none of its food constituents. Inquiry conducted by the New York City health department into the records of the infant milk depots, where sometimes over 25,000 infants were fed daily on pasteurized milk, appears to bear out this assumption. Since that time there has been much careful research on the relation of scurvy to the lack of a protective substance in the food. It has been demonstrated to the satisfaction of all of the most eminent authorities in nutrition that scurvy is due to the lack of a specific dietary factor which is easily destroyed by heating, and that milk which has been pasteurized has lost, in part at least, its protective action against this disease.

It has likewise been demonstrated that there may be pronounced differences in the value of fresh, unheated milks in their antiscorbutic value, depending on the nature of the diet of the cow or lactating woman. The antiscorbutic substance is found abundantly only in fresh fruits, vegetables, green grass, and other forage. Cooked foods, with certain exceptions, such as tomatoes, are of little value, and the milk of a mother whose diet consists largely of cooked or dried or preserved foods will not protect her infant against this disease unless some substance rich in antiscorbutic properties be included. The milk of cows will be more effective as an antiscorbutic food when they are fed green foods.

In view of these new discoveries concerning the possibility of the variation of the nutritive value of milks, to some extent, with the diet and the seasons, and in view of the possible reduction of the food value of milk with respect to the antiscorbutic factor in the process of pasteurization, the commission recommends that orange juice or tomato juice or other antiscorbutic food be added to the diet of infants, especially those artificially fed. The commission wishes also to reaffirm its advocacy of the adoption of pasteurization by municipalities as a public health measure.

(3) Infected Udders.

There is occasional danger to human beings from infected udders of dairy cows when the udder infection is due to pathogenic bacteria of human origin. The danger from udder infection when the bacteria are of bovine origin has not yet been determined and is uncertain, with the exception of infections from bovine tuberculosis, which are known to be dangerous to human beings. Every effort should be made to exclude udder infections from dairy herds. Pasteurization is a protection because it destroys the bacteria of udder infections in milk.

(4) Service Bureau.

The commission recommends the establishment of a service bureau by the New York Milk Committee. This bureau should send a copy of the commission's reports to each governor, each State and Provincial health department, each State and Provincial food bureau, each mayor of cities of more than 10,000 inhabitants, and to each health officer of such cities.

The bureau should offer its services in—

(*a*) the drawing of legislative measures relative to milk and milk products;

(*b*) furnishing literature and speakers to promote the adoption of such legislation.

The service bureau should get track of agitation having milk legislation in view throughout the country, through the services of clipping bureaus, correspondence, and such other measures as are deemed wise.

The service bureau should cooperate with the Surgeon General of the United States Public Health Service and appropriate bureaus of the Department of Agriculture, the Children's Bureau, and other agencies.

Resolved, That the service bureau write each State health and education agency (boards of health, superintendents of education, etc.), suggesting that it provide wall charts, slogans, pictures, etc., to hang in each school, setting forth the need and advantage of a more abundant use of good milk as a food for children and adults;

That in this letter there should be a suggestion that such pictures, diagrams, charts, and slogans be developed in the schools of the State, through school and individual competitions.

(5) Good milk and the school lunch movement.

The commission, in connection with the school lunch movement, recommended that every effort be made to emphasize the importance of good milk in the diet to promote its increased use in all systems of school feeding.

(6) Dried Milks.

The commission adopted the following report on the subject of dried and remade milks:

Whereas the commission is fully convinced that an increased consumption of milk in its various forms would be highly advantageous to the public health; and

Whereas the production and sale of dried and remade milk tends to increase, stabilize, and conserve the milk supply; and

Whereas all evidence now available favors the view that properly prepared dried milk may be regarded as of nutritional value equal to milk of light grade and that the vitamine content of dried milk and pasteurized milk is substantially the same: Therefore be it

Resolved, That the commission urge upon the health and food control officials a liberal attitude such as shall encourage and not hamper the dried milk industry.

The commission desires to reaffirm the resolution adopted by the commission at the Chicago meeting in 1918, regarding the favorable attitude to be taken toward the manufacture and sale of dried or remade milk. It is recognized, however, that all products will not be of the same grade and that grading will be necessary.

In our judgment, the sanitary requirements to be adopted for dried and remade milk, as far as applicable, should be the same as those for liquid milk of like grade.

Milk powder which contains less than 25 per cent of its solids in the form of milk fat should be labeled skimmed or partly skimmed:

Milk powder which contains less than 3 per cent of fats in its solids should be labeled skimmed;

Those containing between 3 and 25 per cent of milk fat in their solids should be labeled partly skimmed.

The term milk should be denied to any product in which the milk fat has been wholly or partly substituted by any other fat.

We shall have to defer other specific recommendations as to the grading of dried milk, but recommend the study of grading. The following suggestions are made as to labeling:

First, that the label show the quality of milk before it is dried, in terms of our present grades and standards;

Second, that the label show the approximate time and temperature of heating;

Third, that if anything has been added to the milk in the process of manufacture or otherwise, its presence and the name and amount of the substance added should be stated on the label;

Fourth, packages of dried milk should be labeled with the date of manufacture.